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Gilles Durand

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EXAMINER

DANIELS, ANTHONY J

ART UNIT

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2622

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/583,486	Applicant(s) DURAND ET AL.	
	Examiner ANTHONY J. DANIELS	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-9 and 11-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-9 and 11-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment, filed 2/12/2010, has been entered and made of record. Claims 7-24 are pending in the application.

Response to Arguments

1. Applicant's arguments regarding the rejection of claim 7 under 35 U.S.C. 102(e) and the Vance reference and the arguments regarding the rejection of claim 15 under 35 U.S.C. 103(a) in view of Sladen and Vance have been fully considered but they are not persuasive.

Applicant's argues, "Because the axis of rotation of Vance's rotating mirror assembly and the optical axis of the image sensor do not coincide, Vance does not disclose this feature of Applicants' claim 7." Applicant further submits a marked-up version of Vance's Figure 4. The examiner respectfully disagrees with Applicant's assessment of Vance's Figure 4 and submits that Vance's optical axis should not be limited to that which is indicated in Applicant's marked-up version. The examiner would also like to submit the Matsuda reference (US # 7,630,627). This reference is not cited as prior art but as evidence that one of ordinary skill in the art would recognize that an optical axis need not necessarily be a single straight line axis perpendicular to the image sensing plane. Matsuda discloses, "...the absolute coordinate system set in the present exemplary embodiment has the origin (point "O" illustrated in FIG. 1) on a point where the optical axis of the photographic lens 1 turned by the quick-return mirror 2 intersects with the focusing screen 4..." Matsuda shows that an optical axis can be turned or reflected and be incident on an imaging plane; in this instance, a focusing screen. In light of Matsuda's teaching,

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the examiner submits that the axis which strikes Vance's spherical housing can be considered an optical axis of the image sensor. However, the examiner does note the difference which Applicant argue. Amending claims 7 and 15 to recite, "...the reflecting member and the at least one optical member being rotatable about optical axes of perpendicular to the image sensor.", would overcome the Vance reference as Vance's axis of rotation is parallel to the image sensor, but can still be broadly interpreted as an optical axis of the image sensor. The examiner offers this amendment, because it would overcome the Vance reference. Also, the amendment clarifies the multiple axes about which the at least one reflecting member and the reflecting member rotate, respectively. In Figure 3, reflecting member rotates about an axis which is spatially separate from the axes in which optical member "2'" rotates. Turning to the optical member "2'", as first portion "5a" rotates in the direction indicated in Figure 3, the axis about which optical member rotates constantly changes. This examiner believes this suggested helps to sort out any ambiguity between the claims and the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 7 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Vance et al. (US # 6,992,699).

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As to claim 7, Vance et al. teaches a multidirectional image acquisition system (Figures 5 and 6) comprising: an image sensor (Figure 5, image sensor “32”); at least one optical member (Figure 5, lens “54”); and a reflecting member (Figure 5, mirror “56”) configured to re-direct light incident thereon toward the image sensor and mounted within the multidirectional image acquisition system, in an optical path between the at least one optical member and the image sensor, the reflecting member and the at least one optical member being rotatable about an optical axis of the image sensor (Figures 5 and 6; Col. 3, Line 63 – Col. 4, Line 23).

As to claim 15, Vance et al. teaches a communications terminal (Figure 2, camera phone “10”) comprising: a casing (Figure 2, housing “40”) and a display disposed within the casing (Figure 2, display “26”), the display having a screen exposed from an external surface of the terminal (Figure 2); an image sensor disposed within the casing (Figure 4, image sensor “32”); at least one optical member (Figure 3, lens “54”); and a reflecting member disposed within the casing (Figure 4, mirror “56”) and configured to re-direct light incident thereon toward the image sensor in an optical path between the at least one optical member and the image sensor, the reflecting member and the at least one optical member being rotatable about the optical axis of the image sensor (Figures 5 and 6; Col. 3, Line 63 – Col. 4, Line 23).

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

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the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 7-16 and 18-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sladen et al. (US 2002/0061767) in view of Vance et al. (US # 6,992,699).

As to claim 7, Sladen et al. teaches a multidirectional image acquisition system (Figure 2 and Figure 3) comprising: an image sensor (Figure 2, video camera “202”); at least one optical member (Figure 2, lens “214”); and a reflecting member configured to re-direct light incident thereon toward the image sensor and mounted within the multidirectional image acquisition system (Figure 2, mirror “204”; [0027], Lines 23-36). The claim differs from Sladen et al. in that it further requires that the reflecting member be located in an optical path between the at least one optical member and the image sensor and that the reflecting member and the at least one optical member be rotatable about an optical axis of the image sensor.

In the same field of endeavor, Vance et al. teaches a camera device with selectable image paths including a lens housing wherein a mirror is located between a lens and an image sensor. A user selects an imaging path by manually rotating both the reflecting member and the lens about an optical axis in order to direct light to the image sensor (Figures 5 and 6; Col. 3, Line 63 - Col. 4, Line 23). In light of the teaching of Vance et al., it would have been obvious to one of

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ordinary skill in the art to include the ability in Sladen et al. to rotate both the lens and the mirror in order to direct light to the image sensor, because this would provide a more compact imaging portion for the portable communication device of Sladen et al.

As to claim **8**, Sladen et al., as modified by Vance et al., teaches the system of claim 7 further comprising a casing split into a first portion that contains the optical member and the reflecting member and a second portion that contains the image sensor (see Sladen et al., Figure 2 and Vance et al., Figures 5 and 6; *{The examiner interprets the portion of the casing containing the lens and the mirror as the first portion and the portion containing the video camera sensor as the second portion.}*).

As to claim **9**, Sladen et al., as modified by Vance et al., teaches the system of claim 8 wherein the casing is shaped as a cylinder and the first portion is rotatable with respect to the second portion about a central axis of the cylinder (see Sladen et al., Figure 15; [0036] and [0037]; see Vance et al., Figures 5 and 6).

As to claim **10**, Sladen et al., as modified by Vance et al., teaches the system of claim 7 wherein the optical member and the image sensor are adjacent to one another (see Sladen et al., Figure 2 and Vance et al., Figures 5 and 6; *{The lens and video camera are optically adjacent.}*).

As to claim **11**, Sladen et al., as modified by Vance et al., teaches the system of claim 7 wherein the reflecting member is one of a mirror (see Sladen et al., Figure 2, mirror “204” and Vance et al., Figures 5 and 6, mirror “56”) and a prism.

As to claim **12**, Sladen et al., as modified by Vance et al., teaches the system of claim 7 further comprising a single part, the optical member being a bubble formed in the single part, and the reflecting member being a metalized oblique edge of the single plastic part (see Vance et al.,

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Figures 5 and 6). Although Sladen et al., as modified by Vance et al., does not state that the single part is plastic, the examiner takes **Official Notice** that the concept of using plastic to form imaging portions in camera phone devices is well known and expected in the art. One of ordinary skill in the art would have been motivated use plastic in the device of Vance et al., because one of ordinary skill in the art would recognize that plastic is a durable material not prone to damage.

As to claim **13**, Sladen et al., as modified by Vance et al., teaches the system of claim 12 wherein the image sensor is disposed within the single plastic part (see Sladen et al., Figure 2).

As to claim **14**, Sladen et al., as modified by Vance et al., teaches the system of claim 7 wherein the reflecting member is disposed outside of a divergence cone of the optical member (see Vance et al., Figures 5 and 6).

As to claim **15**, Sladen et al. teaches a communications terminal (Figure 2) comprising: a casing (Figure 2, mobile phone housing “200”) and a display disposed within the casing, the display having a screen exposed from an external surface of the terminal (Figure 2, display “206”); an image sensor disposed within the casing (Figure 2, video camera “202”); at least one optical member (Figure 2, lens “214”); and a reflecting member disposed within the casing (Figure 2, mirror “204”) and configured to re-direct light incident thereon toward the image sensor in an optical path of the image sensor (Figure 2; [0027], Lines 23-36). The claim differs from Sladen et al. in that it further requires that the reflecting member be located in an optical path between the at least one optical member and the image sensor and that the reflecting member and the at least one optical member be rotatable about an optical axis of the image sensor.

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In the same field of endeavor, Vance et al. teaches a camera device with selectable image paths including a lens housing wherein a mirror is located between a lens and an image sensor. A user selects an imaging path by manually rotating both the reflecting member and the lens about an optical axis in order to direct light to the image sensor (Figures 5 and 6; Col. 3, Line 63 - Col. 4, Line 23). In light of the teaching of Vance et al., it would have been obvious to one of ordinary skill in the art to include the ability in Sladen et al. to rotate both the lens and the mirror in order to direct light to the image sensor, because this would provide a more compact imaging portion for the portable communication device of Sladen et al.

As to claim **16**, Sladen et al., as modified by Vance et al., teaches the terminal of claim 15 further comprising a keypad disposed on the external surface of the casing (see Sladen et al., Figure 2, keypad “212”).

As to claim **18**, Sladen et al., as modified by Vance et al., teaches the terminal of claim 15 wherein the casing is split into a first portion, which contains the optical member and the reflecting member, and a second portion, which contains the image sensor (see Sladen et al., Figure 2 and Vance et al., Figures 5 and 6; *{The examiner interprets the portion of the casing containing the lens and the mirror as the first portion and the portion containing the video camera sensor as the second portion.}*).

As to claim **19**, Sladen et al., as modified by Vance et al., teaches the terminal of claim 18 wherein the casing is shaped as a cylinder and the first portion is rotatable with respect to the second portion about a central axis of the cylinder (see Sladen et al., Figure 15; [0036] and [0037]; see Vance et al., Figures 5 and 6).

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As to claim **20**, Sladen et al., as modified by Vance et al., teaches the terminal of claim 15 wherein the optical member is disposed within the casing (see Sladen et al., Figure 2), and the reflecting member, the optical member and the image sensor comprise an image acquisition system of the terminal adjacent an upper edge of the casing (see Sladen et al., Figure 4).

As to claim **21**, Sladen et al., as modified by Vance et al., teaches the terminal of claim 15 wherein the optical member is disposed within the casing (see Sladen et al., Figure 2), and the reflecting member, the optical member and the image sensor comprise an image acquisition system of the terminal adjacent a side edge of the casing (see Sladen et al., Figure 4).

As to claim **22**, Sladen et al., as modified by Vance et al., teaches the terminal of claim 15 wherein the image sensor and the optical member are oriented perpendicularly to one another (see Vance, Figures 5 and 6).

As to claim **23**, Sladen et al., as modified by Vance et al., teaches the terminal of claim 15 wherein the reflecting member is disposed outside of a divergence cone of the optical member (see Sladen et al., Figure 2).

As to claim **24**, Sladen et al., as modified by Vance et al., teaches the terminal of claim 15 wherein the reflecting member is one of a mirror (see Sladen et al., Figure 2, mirror "204") and a prism.

2. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sladen et al. (US 2002/0061767) in view of Vance et al. (US # 6,992,699) and further in view of Robb (US # 6,177,950).

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As to claim 17, Sladen et al., as modified by Vance et al., teaches the terminal of claim 16. The claim differs from Sladen et al., as modified by Vance et al., in that it further requires that the image sensor is connected with the display via a flexible wire.

In the same field of endeavor, Robb teaches a multidirectional imaging system wherein an image sensor is connected with a display through a flexible wire (Figure 6, camera “2” and flexible electrical circuit ribbon “118”). In light of the teaching of Robb, it would have been obvious to one of ordinary skill in the art to include the flexible wire connection between the video camera and display of Sladen et al., because an artisan of ordinary skill in the art would recognize that this would provide a robust connection not prone to damage.

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY J. DANIELS whose telephone number is (571)272-7362. The examiner can normally be reached on 8:00 A.M. - 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sinh Tran/
Supervisory Patent Examiner, Art Unit
2622

AD
2/19/2009